

ABSTRACT

NMOS composite device Vds bootstrappers that mitigate the effects of decreased power supply rejection and increased channel length modulation in minimum or short channel length devices. The NMOS composite devices have a native or at least a low threshold device over a short channel device, with the gate of the native or low threshold device being controlled responsive to the input or output of the short channel device to clamp the drain - source voltage of the short channel device while holding the short channel device in saturation. In one embodiment, a native device is used, with the gate of the native device being connected to the gate of the short channel device. Other embodiments, including embodiments in the form of source followers having enhanced linearity are disclosed.